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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/663,786	09/17/2003	Shigeru Kuramoto	242926US0	2975
22850 7590 12/10/2007 OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314			EXAMINER ROE, JESSEE RANDALL	
			ART UNIT 1793	PAPER NUMBER
			NOTIFICATION DATE 12/10/2007	DELIVERY MODE ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/663,786	Applicant(s) KURAMOTO ET AL.	
	Examiner Jessee Roe	Art Unit 1793	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 3-5, 7-11, 13-15-17 and 24 is/are pending in the application.
- 4a) Of the above claim(s) 7-10 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,11,13,15-17 and 24 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 28 September 2007 has been entered.

Status of the Claims

Claims 1, 3-5, 7-11, 13, 15-17 and 24 are pending wherein claims 1, 7, 11, 13, 15-17 and 24 are amended; claims 2, 6, 12, 14 and 18-23 are canceled; and claims 7-10 are withdrawn from consideration.

Status of Previous Rejections

The previous rejection of claims 1, 3-5, 11, 13, 15-17 and 24 under 35 U.S.C. 103(a) as being unpatentable over Saito et al. (US 6,607,693) is withdrawn in view of the Applicant's Declaration filed 27 September 2007.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-5, 11, 13, 15-17 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bitter et al. (GB 2,190,100).

In regards to claims 1, 11, 13, 15, 16 and 17, Bitter et al. (GB '100) disclose beta titanium-based alloys containing 3 to 28 percent (atomic percent) of one or more of the elements aluminum, chromium, iron, hafnium, cobalt, copper, manganese, molybdenum, nickel, niobium, palladium, silver, silicon, tantalum, vanadium, tungsten, tin, zirconium, beryllium, boron, carbon, oxygen, rare earths and yttrium (abstract and page 1, lines 5-39).

The Examiner asserts that the atomic percentages disclosed by Bitter et al. (GB '100) would overlap the mass percentages required by the instant invention. It would have been obvious to one of ordinary skill in the art at the time the invention was made to select one or more of molybdenum (claims 1, 11, 15 and 16), vanadium (claims 1, 11, 15 and 16), tungsten (claims 1, 11, 15 and 16), niobium (claims 1, 11, 15 and 16), tantalum (claims 1, 11, 15 and 16), iron (claims 1, 13, 15 and 17), chromium (claims 1, 11, 15 and 16), copper (claims 1, 11, 15 and 16), oxygen (claims 1, 11 and 15), zirconium (claim 15), hafnium (claim 15), manganese (claim 15), tin (claim 15), and

boron (claim 15) from the titanium alloys containing 3 to 28 percent (atomic percent) of additive elements as disclosed by Bitter et al. (GB '100) because Bitter et al. (GB '100) disclose the same utility throughout the disclosed range (abstract and page 1, lines 31-39). MPEP 2144.08 (II)(4)(a).

In regards to the elemental formula found in claims 1 and 15, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, *In re Cooper and Foley* 1943 C.D. 357, 552 O.G. 177; 57 USPQ 117, *Taklatwalla v. Marburg*, 620 O.G. 685, 1949 C.D. 77, and *In re Pilling*, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of proportions of elements would appear to require no more than routine investigation by those of ordinary skilled in the art. *In re Austin, et al.*, 149 USPQ 685, 688.

Still regarding claims 1 and 15, Bitter et al. (GB '100) disclose small quantities of nitrogen (0.1 to 500 mbar) which would qualify as an impurity (abstract and page 1, lines 31-39). MPEP 2111.03.

Still regarding claims 1 and 15, Bitter et al. (GB '100) disclose that the titanium alloy would be of β type (page 1, lines 5-15).

In regards to the recitation, "wherein said titanium alloy is produced by a solution treatment comprising: heating a raw titanium alloy material to form a single phase at a room temperature above the $\alpha+\beta/\beta$ transformation temperature of the raw titanium alloy material; and quenching the heated raw titanium alloy material to form a titanium alloy that is β single phase at room temperature." of claims 1 and 15, the Examiner asserts

that the claim is directed to a product and this recitation would be a process limitation. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). Therefore, the claimed process limitations in the product claims would not render the titanium alloy distinct from the titanium alloy disclosed by Bitter et al. (GB '100).

In regards to claims 3-5, Bitter et al. (GB '100) disclose a titanium alloy as shown above, but Bitter et al. (GB '100) do not specify that the Young's modulus would be 70 GPa or less; the tensile strength would be 1000 MPa or more; or an elastic deformability of 1.6%. However, Bitter et al. (GB '100) disclose beta titanium alloys substantially similar to that of the instant invention. Therefore, these properties would be expected with an alloy having the same composition. MPEP 2112.01 I.

In regards to claim 24, the recited process for producing a titanium alloy involving solution treatment comprising: heating the raw titanium-alloy material to form beta single phase therein; and quenching the heated raw titanium alloy material; thereby providing a titanium alloy characterized as a beta single phase at 273-313 K, the Examiner notes that claim 24 is a product-by-process claim. Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of

production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process.” In re Thorpe, 777F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113. Therefore, the claimed process limitations for the titanium alloy would not render the titanium alloy distinct from the titanium alloy of Bitter et al. (GB '100).

Response to Declaration

The Declaration under 37 CFR 1.132 filed 27 September 2007 is sufficient to overcome the rejection of claims 1, 3-5, 11, 13, 15-17 and 24 based upon 35 U.S.C. 103(a) as being unpatentable over Saito et al. (US 6,607,693). The Applicant's Declaration filed 27 September 2007 is effective to show that a titanium alloy consisting of beta-stabilizers and oxygen would form a mixed phase after two steps of hot working and one cold working step, as required by Saito et al. (US 6,607,693), and not a beta single phase, as required by the instant claims.

Response to Arguments

Applicant's arguments filed 19 September 2007 have been fully considered but they are not persuasive.

First, the Applicant primarily argues that Bitter et al. (GB '100) do not disclose or suggest titanium alloys that have been produced by solution treatment or a beta single phase. In response, the Examiner notes that even though product-by-process claims

are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964, 966 (Fed. Cir. 1985). See MPEP 2113. Therefore, the claimed process limitations for the titanium alloy would not render the titanium alloy distinct from the titanium alloy of Bitter et al. (GB '100). Further, Bitter et al. (GB '100) disclose that the titanium alloy would be of β type (page 1, lines 5-15).

Second, the Applicant primarily argues that Bitter et al. (GB '100) do not provide a motivation for making a titanium alloy having a Mo_{eq} ranging from 3 to 11 percent and an interstitial element content of between 0.6 to 3.0 percent. In response, it is well settled that there is no invention in the discovery of a general formula if it covers a composition described in the prior art, In re Cooper and Foley 1943 C.D. 357, 552 O.G. 177; 57 USPQ 117, Taklatwalla v. Marburg, 620 O.G. 685, 1949 C.D. 77, and In re Pilling, 403 O.G. 513, 44 F(2) 878, 1931 C.D. 75. In the absence of evidence to the contrary, the selection of proportions of elements would appear to require no more than routine investigation by those of ordinary skilled in the art. In re Austin, et al., 149 USPQ 685, 688. Further, Bitter et al. (GB '100) provide a list of elements to select from that meet the compositional limitations of the instant invention. MPEP 2144.08 (II)(4)(a).


Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jessee Roe whose telephone number is (571) 272-5938. The examiner can normally be reached on Monday-Friday 7:30 AM - 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dr. Roy V. King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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